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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,420

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EXAMINER

STIMPert, PHILIP EARL

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PAPER NUMBER

3746

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,420	Applicant(s) LACROIX ET AL.	
	Examiner Philip Stimpert	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/24/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters “10” and “11” have been used to designate both inlets and outlets in various of the figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 2 and 3 are objected to under 37 CFR 1.75 for depending from themselves. For the purposes of this office action, claim 2 will be considered to depend from claim 1, and claim 3 will be considered to depend from claim 2.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 4, the last line of the claim contains a second positive recitation of "a magnetic field."

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kershaw et al. (US 5,997,261) in view of McKee et al. (US 6,034,465).

8. Regarding claim 1, Kershaw et al. teach an electric fluid pump (10) having an upper housing (12) having a fluid inlet (14) and outlet (shown as a dotted circle in upper right corner of Fig. 1), an impeller (16) seated within the upper housing (12) and having magnets (44) secured thereto, a lower housing (26) for mating with the upper housing (12) having an upper wall (50) for closing the upper housing (12) and a shaft (46) extending from the wall and rotatably supporting the impeller (16). Kershaw et al. also teach an end cap (62) for closing a stator within the lower housing. Kershaw et al. do not teach a stator including plurality of pillars with top plates. McKee et al. teach an electric fluid pump having a motor with several useful features. In particular, McKee indicate that their motor increases power available while maintaining a compact design

Art Unit: 3746

(col. 1, ln. 37-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pump of Kershaw et al. to use the motor structure taught by McKee et al. to thereby obtain a compact, powerful pump. In relevant part, then, the motor of the modified pump would include an upper wall (50 in Kershaw et al., also 138 in McKee et al.) and a shaft (46 in Kershaw et al., 144 in McKee et al.). According to McKee et al., the motor would further include a stator (10) within the lower housing and spaced from the impeller (as shown in Fig. 7) by the upper wall (138), a plurality of pillars (20) supporting windings (172) for producing a magnetic field to energize and rotate the impeller, a plurality of top plates (top ends of 20 and also 175) at least partially covering the windings (172) and spaced apart by predetermined circumferential gap which would maintain the magnetic field between the stator and impeller.

9. Regarding claim 2, each of the pillars (20) of McKee et al. is substantially bevelled, in that the circumferential bounds of each pillar are aligned in a substantially radial direction, thus the top plates may also considered to be bevelled. Further, this arrangement would be expected by one of ordinary skill in the art to have at least a minimal effect on the magnetic field of the motor, and could thus be said to control it.

10. Regarding claim 3, as taught by McKee et al, the stator includes a toroid plate (139) for supporting the pillars (20).

11. Regarding claim 4, et al. teach an electronic control assembly (60) between the stator and the outer portion of the end cap for controlling the rotation of the impeller (col. 3, ln. 15-20).

Art Unit: 3746

12. Regarding claim 5, Kershaw et al. teach a plurality of vanes (see Fig. 1) for directing fluid within the upper housing (12) between the inlet (14) and the outlet.

13. Regarding claim 9, Kershaw et al. teach a hollow channel (74) extending through the end cap (62).

14. Regarding claim 10, Kershaw et al. teach a first flow tube (66) extending between the end cap (62) and the upper housing (12) in fluid communication with the inlet (14) for passing fluid through the end cap (as shown by arrows in Fig. 1).

15. Regarding claim 11, Kershaw et al. teach a second flow tube (45) extending through a length that is between the end cap (62) and the upper housing (12) and in fluid communication with the outlet for receiving fluid flowing from the end cap (as shown by arrows in Fig. 1).

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kershaw et al. in view of McKee et al. as applied to claim 5 above, and further in view of Kempf et al. (US 6,082,976).

17. Regarding claim 6, neither Kershaw et al. nor McKee et al. explicitly teach the use of a housing molded of a polymeric material. Kempf et al. teach a water supply pump, and particularly teaches that the housing of the pump may be made of polymeric materials (col. 2, ln. 23-41), and that such materials are low cost and easy to manufacture. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use polymeric materials to form the housing of the pump of

Kershaw et al. as modified by McKee et al. in order to reduce cost and increase ease of manufacture.

18. Regarding claim 7, McKee et al. teach a sealing gasket (138) between the upper (impeller) housing and the lower (stator) for sealing fluid therebetween.

19. Regarding claim 8, Kershaw et al. teach an o-ring (adjacent to reference sign 72 in Fig. 1) which is located between the stator and the end cap and seals the lower housing.

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kershaw et al. in view of McKee et al. and Kempf et al. as applied to claim 8 above, and further in view of Fischer et al. (US 6,402,460).

21. McKee et al. teach that the magnet (159) is encapsulated within the impeller (134 in McKee et al.) facing the upper wall (138) of the lower housing (as shown in Fig 11).

Neither Kershaw et al. nor McKee et al. explicitly teach the use of injection molded plastic for the impeller. Fischer et al. teach an abrasion wear resistant fuel pump. In particular, Fischer et al. teach that injection molded plastics can yield improved geometry and surface smoothness in an impeller, if at the cost of abrasion wear resistance (col. 1, ln. 21-25). However, since Kershaw et al. substantially teach a water pump (abstract), one of ordinary skill in the art would expect that the water being pumped would not be especially abrasive. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an injection molded plastic, as taught by Fischer et al., to form the impeller of the pump of Kershaw et al. as

modified by McKee et al., in order to achieve improved geometry and surface smoothness.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cox (US 3,774,059) discusses benefits of beveling stator components for increased attractive forces (col. 3, ln. 40-53 in particular).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Stimpert whose telephone number is (571)270-1890. The examiner can normally be reached on Mon-Fri 7:30AM-4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/

Application/Control Number: 10/565,420
Art Unit: 3746

Page 8

Supervisory Patent Examiner, Art
Unit 3683

/P. S./
Examiner, Art Unit 3746
28 April 2008